CLAIMS

What is claimed is:

1. A distributed stack of programmable network devices, the distributed stack comprising:

a first plurality of programmable network devices, the first plurality of programmable network devices in communication via a first bus, such that the first plurality of programmable network devices includes a first plurality of modules, the first plurality of modules performing a first plurality of network protocols;

a second plurality of programmable network devices, the second plurality of programmable network devices in communication via a second bus, such that the second plurality of programmable network devices includes a second plurality of modules, the second plurality of modules performing a second plurality of network protocols;

wherein the first bus and the second bus are coupled via the Internet.

2. The distributed stack of claim 1, wherein the first plurality of network protocols includes a first application protocol.

3. The distributed stack of claim 2, wherein the first plurality of network protocols includes a first network management protocol.

4. The distributed stack of claim 3, wherein the first application protocol is one of an MPLS protocol, an IP Sec protocol, an L2TP protocol, and a firewall.

5. The distributed stack of claim 4, wherein the first network management protocol is one of an SLA function, an SNMP protocol, and a CMIP protocol.

6. The distributed stack of claim 4, wherein the first network management protocol is one of CORBA and XML.

7. The distributed stack of claim 3, wherein the second plurality of network protocols includes a second application protocol.

8. The distributed stack of claim 7, wherein the second application protocol is one of an MPLS protocol, an IP Sec protocol, an L2TP protocol, and a firewall.

9. The distributed stack of claim 7, wherein the second plurality of network protocols includes a second network management protocol.

10. The distributed stack of claim 9, wherein the first network management protocol is one of an SLA function, an SNMP protocol, and a CMIP protocol.

11. The distributed stack of claim 9, wherein the first network management protocol is one of CORBA and XML.

12. A programmable network device, wherein the programmable network device couples a first computer network to a second computer network, the programmable network device comprising:

two or more software modules, the software modules encoded in a first language, the two or more modules including

a first module, wherein the first module executes an application service on packets routed between the first network and the second network

a second module, wherein the second module executes a network management service on packets routed between the first network and the second network;

a real-time operating system, wherein the two or more software modules are executed on the real-time operating system;

wherein the programmable network device has a minimum line rate of 1 gigabit per second.

13. The programmable network device of claim 12, wherein the application service is one of the group consisting of an MPLS protocol, an IP Sec protocol, an L2TP protocol, and a firewall.

14. The programmable network device of claim 13, wherein the network management service is one of the group consisting of an SLA function, an SNMP protocol, and a CMIP protocol.

15. The programmable network device of claim 13, wherein the network management service is a CORBA Object Request Broker.

16. The programmable network device of claim 13, wherein the network management service is an XML interpreter.

17. A method of loading a plurality of software modules onto a programmable network device, the programmable network device coupled to a LAN via a first interface and to an internetwork via a second interface, the method comprising:

sending a first module from the plurality of modules to the programmable network device via the internetwork;

loading the first module in the programmable network device;

executing the first module in the programmable network device, the first module performing a first network management function on the LAN;

sending a second module from the plurality of modules to the programmable network device via the internetwork;

loading the second module in programmable network device;

executing the second module in the programmable network device, the second module performing a second network management function on the LAN.

18. The method of claim 17, wherein the first function is one of the group consisting of an MPLS protocol, an IP Sec protocol, an L2TP protocol, and a firewall.

19. The method of claim 18, wherein the second function is one of the group consisting of an SLA function, an SNMP protocol, and a CMIP protocol.

20. The method of claim 18, wherein the second function is an XML interpreter.

21. The method of claim 18, wherein the second function is a CORBA Object Request Broker.